

CLAIMS

We claim:

What is claimed is:

1. A composition for removing a biofilm from a surface comprising:
 - (a) one or more metasilicate;
 - (b) one or more carbonate;
 - (c) one or more glyconate; and
 - (d) one or more sulfate.
2. The composition of claim 1, wherein the composition further comprises (e) one or more salts.
3. The composition of claim 1, wherein the concentration is in an amount effect to treat a biofilm in a water system.
4. The composition of claim 1, wherein the one or more metasilicate is an alkali metal silicate selected from the group consisting of sodium or potassium metasilicate, sodium or potassium orthosilicate and mixtures thereof.
5. The composition of claim 1, wherein the one or more carbonate is selected from the group consisting of sodium carbonate, sodium sesquicarbonate, sodium sulfate, sodium bicarbonate and mixtures thereof.
6. The composition of claim 1, wherein the glyconate is selected from the group consisting of ammonium glyconate, lithium glyconate, sodium glyconate, sodium starch glyconate, potassium glyconate, ammonium acid glyconate, sodium acid glyconate, lithium acid glyconate, potassium acid glyconate, ammonium D-glyconate, lithium D-glyconate, sodium D-glyconate, potassium D-glyconate, glyconic acid, glyconic D acid, glyconic L acid, ammonium L-glyconate, lithium L-glyconate, sodium L-glyconate, potassium L-glyconate, magnesium glyconate, magnesium acid glyconate, magnesium D-glyconate, magnesium L-glyconate, calcium glyconate, calcium acid glyconate, calcium

- 44 -

D-glyconate, calcium L-glyconate and mixtures thereof.

7. The composition of claim 1, wherein the one or more sulfate is selected from the group consisting of potassium aluminum sulfate, sulfuric acid, sodium sulfate, potassium sulfate, lithium sulfate, ammonium sulfate, magnesium sulfate, strontium sulfate, aluminum sulfate, and mixtures thereof.
8. The composition of claim 1, wherein the composition does not produce or comprise a peroxide, a terpene or sodium hypochlorite.
9. The composition as defined in claim 1, further comprising an effective amount of a bactericide.
10. The composition as defined in claim 2, wherein the salt is sea salt.
11. The composition as defined in claim 9, wherein the bactericide is any bactericide having a bactericidal potency and host spectrum substantially equivalent to hydrogen peroxide.
12. The composition as defined in claim 1, which further comprises a biofilm dislodging enhancer agent.
13. The composition as defined in claim 12, wherein the enhancer agent is a calcium chelator.
14. The composition as defined in claim 12 wherein the enhancer agent is a chaotropic agent.
15. The composition as defined in claim 1, wherein the composition, prior to final use, is prepared as a composition comprising:

| | |
|--------------------------|--------------|
| (a) Meta Silicate | about 4.9 kg |
| (b) Sodium Carbonate | about 4.5 kg |
| (c) Sodium Glyconate | about 1.5 kg |
| (d) Inorganic salt | about 1.5 kg |
| (e) Potassium Al Sulfate | about 1.5 kg |

per 300 liters of water.

16. A method for removing biofilm from, and/or for preventing biofilm from forming on a surface on a water system, comprising adding an effective amount of a composition of claim 1-15 to the water system.
17. The method of claim 16, further comprising passing an ozone-containing gas through the water.
18. The method of claim 16, further comprising irradiating the supply of water with ultraviolet radiation.
19. The method of claim 18, wherein the ultraviolet radiation includes a wavelength in the range of about 100 nanometers to about 300 nanometers.
20. The method of claim 18, wherein the ultraviolet radiation includes a wavelength in the range of about 120 nanometers to about 242 nanometers.
21. The method of claim 17, wherein the ozone-containing gas is pressurized.
22. The method of claim 17, further comprising generating the ozone-containing gas from an oxygen-containing gas, wherein the oxygen-containing gas is at least one selected from the group consisting of: air, oxygen and oxygen-enriched air.